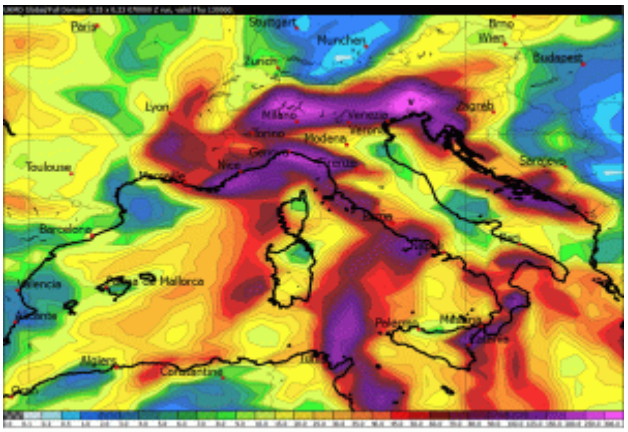
Exceptional rain expected in Italy

Description

Hundreds have been evacuated from parts of Italy after heavy rainfall led to widespread flooding and landslides.

85mm of rain fell in Rome during the twelve hours to 6 am this morning, meanwhile up to 500mm of rain is expected to fall between Sunday and Wednesday over parts of northern and western Italy between Sunday (9 November) and Wednesday, after a brief respite tomorrow (Sat 8 November).



The rainfall totals forecast for Italy between Sunday 9 Nov and Wednesday 12 Nov

As much of the area is already saturated from weeks of heavy rain and storms, there are fears this up and coming high rainfall will lead to further flooding.

The Met Office is continuing to work closely with the Italian Met Services helping forecast the up and coming weather, estimate rainfall totals and advice on where might be most vulnerable to the storms.

Date Created
November 2014

The Met Office’s outlook for the start of winter 2015

Description

There are some headlines in the media today which suggest the UK faces another stormy start to winter before conditions turn cold into January, based on the latest Met Office three month outlook for contingency planners.

As we’ve discussed previously, the outlook is not like a normal weather forecast. It’s an experimental and complex outlook based on probabilities which is designed specifically for those who plan ahead for various contingencies based on possible likelihoods.

It assesses the likelihood of five different scenarios for both temperature and rainfall for the whole of the UK for the whole three months, based on the most probable prevailing weather patterns.

It’s a bit like the science-equivalent of factoring the odds on a horse race and like any horse race, it’s always possible the favourite won’t win.

This is why the outlook has to be used in the right context. So it’s useful for contingency planners, but not that useful for the public who want to know when we might see unsettled weather or which weekend looks good for an outdoor event.

What does the current outlook say?

Our latest three-month outlook suggests an increased risk of milder and wetter than average conditions for the period November-December-January based on our seasonal forecasts and those from other leading centres around the world.

It states “For November-December-January above-average UK-mean temperatures are more likely than below-average” and “Latest predictions for UK-mean precipitation favour near- or above-average rainfall for November-December-January”

However, there are still substantial probabilities that either average or cool/dry conditions may occur. This is because there are many competing factors that determine what our weather will be like in the coming months.

Some more context on the outlook

The outlook suggests the continuing risk of our weather coming in from the Atlantic, which brings unsettled conditions, during the first part of the three month period.

This is a fairly normal set up for the time of year, when we do expect unsettled weather, but the outlook does suggest that “spells of wet and windy weather may be more frequent than is typical”.

As the outlook covers the transition from autumn into winter, there can be big changes in how UK weather is influenced by prevailing weather patterns during the period. Confidence in how the weather patterns will develop later in the period reduces and this is reflected in the outlook when it states “the risk of occasional colder outbreaks increases later in the period.”

As always our forecasts and warnings will highlight the detail of any severe weather when it is expected, enabling everyone to take action based on the best forecasts available. If there is evidence of any severe weather further ahead than 5 days, we will signal this as far ahead as possible through our monthly outlook – which is updated daily.

Date Created
November 2014

Dual Warnings

Description

Today for the first time we have issued a new dual National Severe Weather Warning for wind and rain.

What is a Dual Warning?

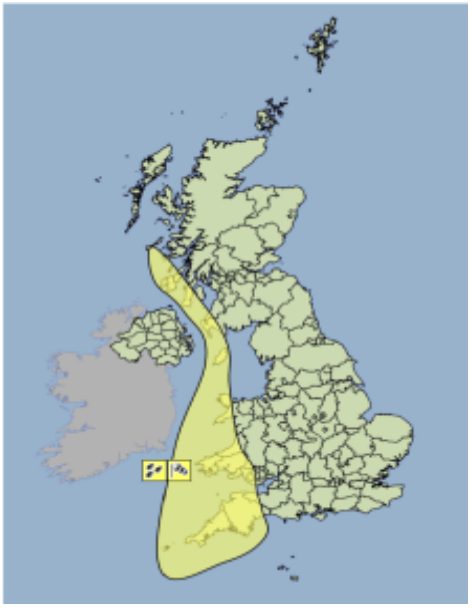
A dual warning is one warning, covering one geographical area, over one period of time in the way a single warning does – but it combines two different types of severe weather. They would only be combined if they were both at the same warning level.

Any of the five types of weather warnings, Wind, Rain, Snow, Ice and Fog, can form a dual warning in any combination. So in theory Wind and Snow could be a dual warning. In practice there are certain weather types that are more likely to form a dual warning; the most likely is Wind and Rain, which is what we see today. More information on our dual warnings can be found at the bottom of our Weather Warning page.

These new dual warnings have been developed following extensive two-way conversations with emergency responders and feedback we have recieved from the public over the past twelve months.

Until now, we would have issued multiple severe weather warnings to cover the range of warnings in place. Quite often however, situations arise where multiple impacts occur and these can now be shown on one map. This should make the information we issue easier to access.

Today's Warning



Dual wind and rain warning

The warning for wind and rain issued today covers Southwest England, Western Scotland and the Irish Sea between 07.00 and 23.45 on Thursday 13 November. A small area of low pressure will move quickly northwards throughout the day bringing a short-lived period of gales and severe gales and spells of heavy rain.

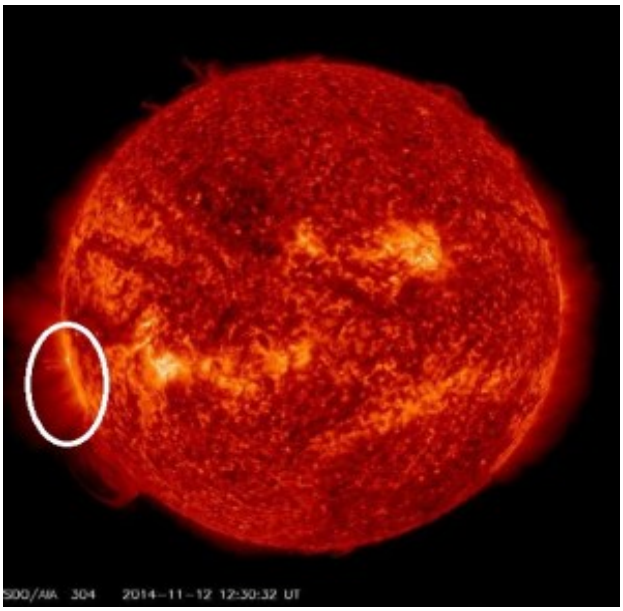
We encourage everyone to keep up to date with the latest forecasts and national severe weather warnings and to stay weather aware this winter by following the Met Office on Twitter, Facebook, Google+ and YouTube for the latest weather information. You can also sign up for severe weather alerts from us through the Twitter Alerts programme, providing critical information directly to your phone. Find out more about how to sign up for Met Office Twitter alerts.

Date Created
November 2014

Giant sun spot moves back into view

Description

The Met Office Space Weather Operations Centre is closely monitoring what was the biggest sun spot in the current 11-year solar cycle as it rotates back onto the face of the Sun. When it last faced the Earth it was the largest since 1990 and about 11 times bigger than the Earth or the size of Jupiter. This sunspot was first visible during the last two weeks of October but then moved round the back of the sun. Whilst it has been out of view from many of our monitoring instruments it doesn't appear to have produced any significant activity.



Sun spot rotates back onto the face of the Sun.

Although this is the biggest sunspot for 25 years it doesn't mean it is very active or that it is more likely anything significant will happen.

Space weather forecasters look for features like the complexity of the magnetic field to determine how active it might be. When this sunspot was visible last month it emitted a couple of strong, and a few moderate, solar flares but nothing out of the ordinary.

The significant events we're looking for are Coronal Mass Ejections (CME) and to date there have been no CME associated with these flares. CME are eruptions of large amounts of matter and energetic particles from the solar atmosphere that can impact our technology here on Earth.

Date Created
November 2014

Wet wet wet this winter?

Description

Every year there's a huge amount of media speculation about what weather we'll see during winter, and this year is no different.

After a recent slew of stories claiming we're in for the coldest winter on record (which weren't based on information from the Met Office), there are now stories claiming we're forecasting the wettest winter in 30 years.

That's not the case and appears to be a misunderstanding of our three-month outlook for contingency planners.

First of all, last winter was the wettest in our digital records dating back to 1910, so if we were to have a wetter winter than that it would be the wettest in over a century – not just for 30 years.

But that's not what our contingency planners outlook says. As we've pointed out here many times in the past, this product isn't like our short range forecasts – it doesn't tell you definitively what the weather is going to be and that's why it's not really that useful for the public.

What it does do is make an assessment of the *likelihood* of seeing wetter or drier than average, and milder or colder than average conditions for the whole of the UK for the whole three month period.

Recent outlooks have been signalling increased risk of milder and wetter conditions for the past couple of months, and indeed that's what we have seen through October and the start of November. So the most likely predicted outcome is what actually happened for these months – but that won't always be the case.

While the recent three month outlooks also highlighted the risk of more unsettled than average conditions, this does not give specific details or tell us whether any records will be broken.

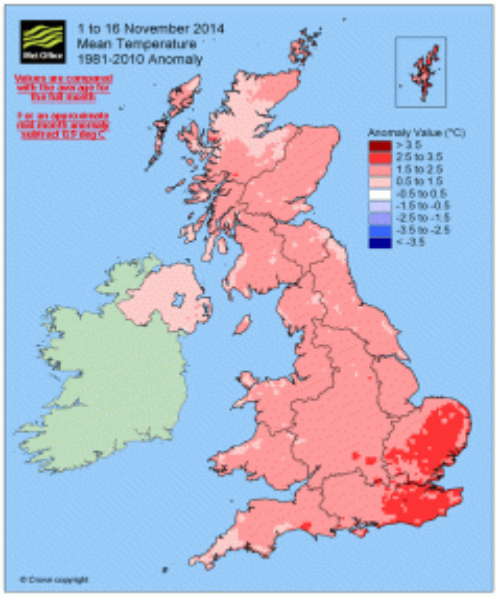
For detailed weather forecasts, our five-day forecasts and weather outlooks to 30-days give the best and most up-to-date advice.

Date Created
November 2014

First half of November sticks with mild theme

Description

Early statistics up to the 16th of November show that month so far has followed the generally warm theme of 2014. Some areas have also been very wet.



Map shows the UK mean temperature for 1-16 November compared to the whole month average.

The mean temperature for the UK was 8.1C, which is 1.9C above the long-term (1981-2010) average for the whole month.

As we're heading towards winter, which starts for meteorologists on 1 December, we would normally expect the first half of the November to be warmer than the second half – but even still, the month so far is above average. There have been few air frosts.

The mildest places compared to average have been in the South East of England and East Anglia – which are both around 2.5C above average.

Perhaps more significant is the rainfall so far this month. After 16 days of the month you'd expect about 53% of the full-month average to have fallen in a 'normal' November, but the UK has already seen 77% (93.1mm).

Northern Ireland has already had more than its full-month average with 150.8mm so far compared to the November average of 112.5mm. This is more than it had through the whole of October.

Looking at regions, some parts of southern England, south Wales and eastern Scotland have also received around their whole-month average rainfall after just 16 days. South-eastern parts of Northern Ireland have recorded over 200% of their average.

Overall, the UK is on course for a mild and wet month – but it's too early to say exactly where we'll end up after the full-month figures are included.

	Mean temp		Sunshine		Rainfall	
1-16 Nov	**Deg C**	**Diff to avg**	**Hours**	**% of Nov Avg**	**Actual mm**	**% of Nov Avg**
UK	8.1	1.9	32.9	57	93.1	77
England	8.9	2.0	36.6	57	74.1	84
Wales	8.5	1.7	37.7	67	130.9	81
Scotland	6.7	1.7	24.2	53	104.3	63
N Ireland	7.6	1.1	39.3	73	150.8	134

Data from the Met Office's UK digitised records dating back to 1910. You can explore our climate data on our website.

Date Created
November 2014

US snowfall and will it impact the UK?

Description

Parts of the US and Canada are seeing particularly cold weather and heavy snowfall at the moment.

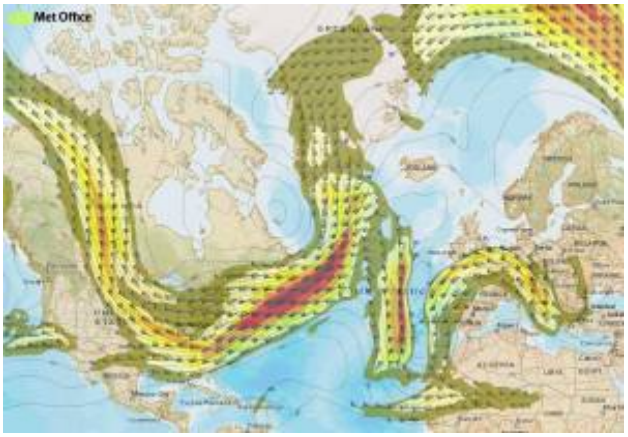


Chart showing the position of the jet stream over North America as at 00:01 on 20 November.

A southward buckle in the jet stream has seen cold polar air flow south to north eastern parts of North America.

In the Buffalo region of New York state, temperatures have fallen as low as -15C and 4-5 ft (about 1.5 metres) of snow has fallen – enhanced by what's known as the 'lake effect'. Another 2-4 ft (about 1 metre) is expected through today.

The snowfall is set to ease on Friday with much milder conditions through the weekend giving a rapid and significant thaw – which could bring a risk of flooding.

This risk could increase through the start of next week when some very heavy rain is expected across the area.

What is lake effect snow?

Lake Superior (top left) and Michigan (centre) can be seen generating ‘lake effect’ snow. Provided by the SeaWiFS Project, NASA/Goddard Space Flight Center, and ORBIMAGE

This is an effect which applies to areas around large lakes like those seen in the northern US – Lake Superior has an area of more than 30,000 sq miles.

When cold air moves across the relatively warm waters of the lake, air rises due to convection which creates clouds and heavy showers. In cold conditions, the moisture in the clouds will fall as heavy snow.

As Buffalo as it the eastern tip of Lake Erie it has been particularly susceptible to this effect during the recent weather.

While we don’t have any lakes big enough for this effect in the UK, we can occasionally see a similar scenario when we get easterly winds in the winter.

Cold air from the continent can be warmed by the relatively warm North Sea as it moves across the water, bringing snow showers to eastern parts of the UK. However, there’s no sign of this in the immediate future for the UK.

Will the US weather affect the UK?

Many people believe that there’s a rule of thumb that weather in the US will arrive in the UK a few days later – but that’s by no means always the case.

In this instance, there’s high confidence that the cold snowy weather will stay on the western side of the Atlantic.

Also, in past winters similar weather situations in the US have strengthened the jet stream and increased the risk of storms across our shores. Again, in this instance, this isn’t expected at the

moment.

What we do expect to see is further changeable weather over the coming few days.

Date Created
November 2014

Untangling the global drivers of UK winter weather

Description

As we head towards the start of winter, which starts for meteorologists on 1 December, there's always a great deal of media and public speculation about what weather we might have in store.

To answer that question, we need to look beyond the UK. The worlds' weather is interconnected, and there are certain large scale global drivers which we know have influences on UK weather at this time of year – so what are these doing at the moment?

El Niño, which sees unusually warm sea surface temperatures across the tropical Pacific and can increase the risk of cold winter conditions in the UK, has been much discussed after initial signs of development earlier this year.

Its progress has been slow, however, and while there remains a good chance of a weak event by the end of the year it is also possible that El Niño conditions will remain neutral. In any case, this factor is not expected to be strong enough to exert much influence on weather patterns in Europe during the next three months.

The North Atlantic Oscillation (NAO) describes differences in the usual pressure patterns over the North Atlantic – with positive and negative phases.

A positive phase is thought more likely than a negative one on average over the next three months. This is characterised by enhancement of the westerly winds across the Atlantic which, during winter, brings above-average temperatures and rainfall to Western Europe.

As we head later into winter, confidence about the heightened likelihood of positive NAO reduces – suggesting chances of drier and colder conditions return closer to normal.

The Quasi-Biennial Oscillation (QBO) sees high level (stratospheric) winds over the equator change from westerly to easterly phases – and it's currently in the latter of the two.

In winter months this can lead to a greater incidence of high pressure blocking patterns over the northern hemisphere, which would increase the probability of colder and drier weather across Europe. Essentially this is providing an opposite signal to the NAO.

There are other factors to consider too. For example, Arctic sea ice extent is slightly below average but as yet it is not clear whether this might have an impact on weather patterns in the UK.

No single one of these drivers will determine the UK's winter on its own – instead they all interact together to govern the weather trends we can expect over the coming months.

Disentangling these different influences remains a challenging area of science which the Met Office is improving all the time, but detailed and highly certain UK outlooks are not possible over these timescales.

The Met Office's long-range outlooks give probabilities based on scenarios of being considerably wetter or drier, colder or milder than usual.

Currently the outlook for December 2014 to February 2015 suggests that milder and wetter than average winter conditions are slightly more likely than other outcomes. However, compared to day-to-day weather forecasts, the probabilities are much more finely balanced – for example, the outlook gives a 1 in 4 chance of the mildest scenario and a 1 in 10 chance of the coldest scenario. These numbers suggest it would be a mistake to interpret the outlook for a very mild outcome as 'highly likely'; likewise very cold conditions cannot be ruled out.

The outlook gives similar probabilities for precipitation (rain, hail, sleet and snow), with the chances of the wettest scenario being 1 in 4 and the chances of the driest around 1 in 10.

These three month outlooks cover a whole three month period, taking into account both day and night, as well as the whole of the UK. This means that even in the event of, say, an overall mild winter we could still see spells of cold or very cold weather.

With this in mind, what exactly we'll see for the winter ahead remains uncertain. In terms of strong winds, heavy rainfall, cold snaps or even snow, while longer-range outlooks can give us general tendencies, the details can only be predicted by our day-to-day weather forecasts.

The Met Office's accuracy over all timescales is world-leading, however, so you can trust that we'll keep everyone up-to-date with all the latest information on the weather whatever the winter has in store.

Date Created
November 2014

Severe weather around the world

Description

While the UK is currently experiencing relatively benign weather for the time of year, extreme conditions are expected in some other parts of the world.

Morocco and Spain

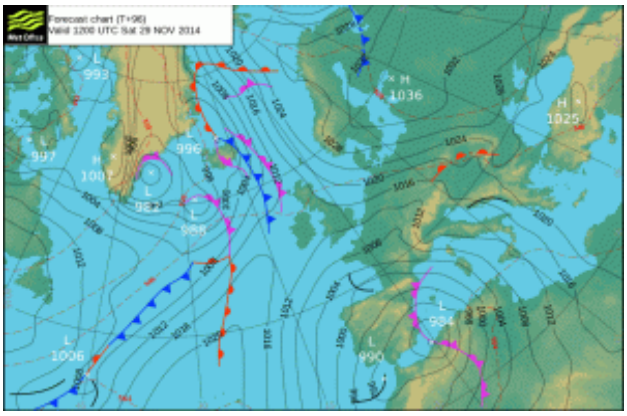
Last Saturday, Agadir in Morocco saw 90mm of rain fall in just 24 hours, which is around twice the monthly November average for the region of just 50mm. The subsequent flooding resulted in more than 30 fatalities.

Unfortunately, more severe weather is expected through Friday and into the weekend across Morocco, but particularly around the southwest of the country.

A combination of a deep area of low pressure, relatively warm sea temperatures and strong winds will bring heavy rainfall. 100-150mm of rain could fall across SW Morocco on Friday with further heavy rain likely on Saturday, and totals could be enhanced over higher ground. Conditions should improve into Sunday.

Through the weekend, the same area of low pressure is expected to bring very heavy rain across North East Spain. Rainfall totals for both days could reach 150-300mm, locally 400mm over higher ground, with a gradual improvement into start of next week.

Both areas could experience flooding and landslides from the intensity and duration of rainfall, as well as the rain that has already fallen in recent days.



Forecast Pressure Chart for Midday on Saturday 29th November

North East America

A rapidly deepening area of low pressure is bringing heavy rain and snowfall across parts of the

Eastern Seaboard of North America, with the storm quickly moving northeast over the coming days.

The weather has been caused by an extreme temperature contrast between the warm weather of the Gulf Coast and the bitter cold across inland parts of North America.

While heavy rain is expected on the coast, snow is likely inland, mainly but not exclusively over higher ground. As tomorrow is Thanksgiving, this system poses a risk of travel disruption to what is normally one of the busiest holiday periods in the States. Over 4 inches of snow could fall over parts of the northeast, before the weather improves into the weekend.

Date Created
November 2014

Autumn set to be third warmest on record

Description

This autumn is on course to be the third warmest on record for the UK but rainfall is close to average, according to early statistics from the Met Office.

The mean temperature from 1 September to 25 November, then assuming average conditions for the last few days of the season, is 10.8C which is 1.4C above the long-term (1981-2010) average.

This means it currently ranks behind 2006 (11.4C) and 2011 (11.3C) in the digital UK records dating back to 1910.

Looking at individual countries, England stands out as the warmest relative to the long-term averages, whilst Northern Ireland was the least mild. This autumn is the third warmest for all UK countries apart from Northern Ireland, where it is the 9th warmest.

The mild conditions through autumn follow on from a generally warm year overall, with all months except August having seen above average temperatures. The Met Office will make an early statement on the temperature for 2014 next week.

	Mean temp		**Sunshine**		**Rainfall**	
Early autumn*	**Deg C**	**Diff to avg**	**Hours**	**% of Atmn Avg**	**Actual mm**	**% of Atmn Avg**
UK	10.8	1.4	263.4	96	319.3	93
England	11.8	1.5	285.2	94	236.3	95
Wales	11.1	1.3	294.0	106	368.9	82
Scotland	9.3	1.3	215.5	95	440.3	92
N Ireland	10.3	0.9	280.5	110	333.4	103

** Note that early autumn figures use statistics from 1 September to 25 November, then assume average conditions to the end of the season.*

Rainfall has been close to average for the season – despite record-breaking dry conditions across the UK in September. The rainfall of October and November has almost offset the very dry September for many areas, with a few areas having ‘caught up’ to the whole-Autumn long-term average.

Sunshine totals for the season are also close to average.

For November so far (to the 25th of the month), it has been the joint fourth warmest for the UK in our records back to 1910. Like most individual months this year, it has been warmer than average but not remarkably so.

It has also been wetter than average for the UK, but not record-breakingly so.

	Mean temp		Sunshine		Rainfall	
1-25 Nov**	**Deg C**	**Diff to avg**	**Hours**	**% of Nov Avg**	**Actual mm**	**% of Nov Avg**
UK	7.7	1.5	45.9	80	118.4	98
England	8.4	1.5	49.1	76	100.9	114
Wales	8.0	1.2	56.7	100	156.1	96
Scotland	6.5	1.5	36.0	79	127.7	77
N Ireland	7.5	1.0	55.6	103	172.1	153

*** Early November statistics include figures from 1-25 November. Final numbers for the month will change after the final few days have been included.*

Date Created
November 2014